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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/797,518	03/09/2004	Martin Burgbacher	870-003-172	4224

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EXAMINER
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NGUYEN, HANH N

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 12/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/797,518	BURGBACHER, MARTIN	
	<b>Examiner</b>	<b>Art Unit</b>	
	Nguyen N. Hanh	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 14-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3 sheets</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of claims 1-13 in the reply filed on 10/7/2005 is acknowledged. The traversal is on the ground(s) that "claims 14-19 not drawn to the method of making the motor, rather claims 14-19 are drawn to a method of operating an already-manufactured motor". This is not found persuasive because as recited in claim 14, the limitation "injecting an additional magnetic flux from adjacent magnet" implies a step of inserting a magnet to a rotor (method of making). Moreover, even though claims 14-19 directed to a method of operating a motor, it is a different invention from the apparatus itself. For the at least above reason, the requirement is still deemed proper and is therefore made FINAL.

### ***Claim Objections***

2. Claim 13 is objected to because of the following informalities: "el" in line 2 of claim 13 should be deleted. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

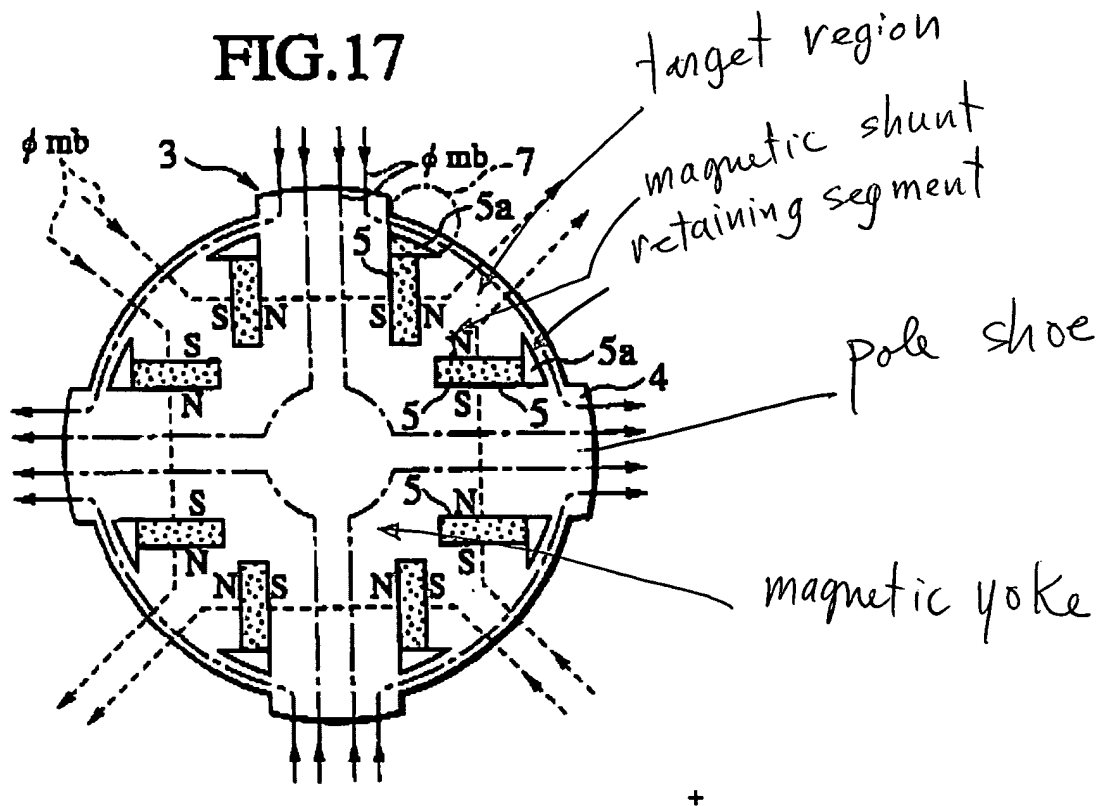
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakai et al.

Regarding claim 1, Sakai et al. disclose an electric motor which comprises: a stator (Fig. 2) having a polyphase stator winding (Col. 2, lines 15-40); a rotor (3 in Fig. 17), separated from the stator (1) by an air gap (Fig. 2), which has on its side facing toward the air gap a plurality of salient poles with pole shoes facing the air gap and, on its side facing away from the air gap, a magnetic yoke, whose pole shoes (a protruding region in Fig. 15B) serve to generate a sinusoidal induced voltage in the stator winding; a recess (5), provided between the magnetic yoke and a pole shoe, in which at least one permanent magnet (6) is arranged, which recess (5) is adjoined on each side of the at least one permanent magnet (6), approximately in the circumferential direction, by a low magnetic conductivity region (5a) that adjoins, on its side facing toward the air gap, a retaining segment (please see markups) made of ferromagnetic material, which segment serves to connect the pole shoe mechanically to the magnetic yoke; and at least one magnetic shunt (please see markups) that extends from a source segment, located closer to the air gap, of the at least one permanent magnet (6), through a low magnetic conductivity region adjacent to that segment to a target region (please see markup) of the relevant retaining segment in order to inject at that target region an additional magnetic flux from that permanent magnet (6).



Regarding claim 2, Sakai et al. also disclose an electric motor wherein the magnetic yoke of the rotor (3), its pole shoes, the retaining segments and the magnetic shunts are formed as laminations of a lamination stack (Col. 25, lines 45-46).

Regarding claim 3, Sakai et al. also disclose an electric motor wherein in order to produce a low magnetic conductivity region at the relevant location; at least one recess (5a) is formed in the laminations.

Regarding claim 4, Sakai et al. also disclose an electric motor wherein the retaining segments made of ferromagnetic material are, during operation, at least locally substantially magnetically saturated (Col. 9, lines 5-9).

Regarding claim 5, Sakai et al. also disclose an electric motor wherein a magnetic shunt (please see markups) extends to a target region that is connected to the

Art Unit: 2834

relevant pole shoe via a part of the retaining segment that is at least locally saturated during operation.

Regarding claim 6, Sakai et al. also disclose an electric motor wherein a magnetic shunt (please see markups) extends to a target region that is connected to the magnetic yoke via a part of the retaining segment that is at least locally saturated during operation (Col. 9, lines 5-9).

Regarding claim 7, Sakai et al. also disclose an electric motor wherein the at least one permanent magnet (6 in Fig. 10) has, on its side located closer to the air gap and facing toward an adjacent low magnetic conductivity region, a beveled edge which forms a beveled interface of that permanent magnet.

Regarding claim 8, Sakai et al. also disclose an electric motor wherein the magnetic shunt extends substantially from that beveled interface to the target region (Fig. 10).

Regarding claim 9, Sakai et al. also disclose an electric motor wherein the pole shoe covers at least a part of the beveled interface (Fig. 10).

Regarding claim 10, Sakai et al. also disclose an electric motor wherein the at least one permanent magnet (6 in Fig. 17) has, on its side facing toward a low magnetic conductivity region associated with it, a cross section whose lateral boundary transitions substantially orthogonally into an interface of that permanent magnet (6) facing toward the pole shoe, and the magnetic shunt (please see markups) extends from a source region, located closer to the air gap, of that lateral boundary through the low magnetic conductivity region to the target region of the retaining segment.

Regarding claim 11, Sakai et al. also disclose an electric motor wherein the pole shoe extends beyond the lateral boundary (Fig. 17).

Regarding claim 12, Sakai et al. also disclose an electric motor wherein wherein a ratio, of the width of a rotor magnet to the pole pitch of the relevant rotor pole, is selected so as to minimize generation of any cogging torque (Col. 19, lines 39-45).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai et al.

Regarding claim 13, Sakai et al. show all limitations of the claimed invention except for showing the electric motor wherein the average angular extension (beta) of a rotor magnet is approximately 115° to 135°. It would have been obvious to one having ordinary skill in the art at the time the invention was made to make the average angular extension (beta) of a rotor magnet approximately 115° to 135°, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

### ***Conclusion***

Art Unit: 2834

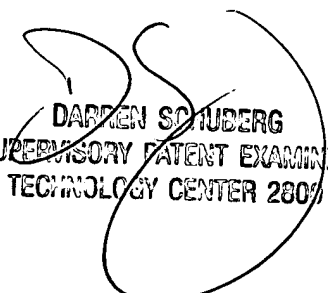
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh N Nguyen whose telephone number is (571) 272-2031. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg, can be reached on (571) 272-2044. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and (571) 273-8300 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

HNN

December 5, 2005

  
DARREN SCHUBERG  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800